

What is claimed is:

1 1. In an Internet Protocol (IP) network having a plurality of nodes, a method of  
2 designating a queue-responsible node comprising the steps of:

3 (a) utilizing the IP addresses of said plurality of nodes to designate a  
4 master node;

5 (b) designating all other nodes as slave nodes; and

6 (c) maintaining the queue positions of all nodes in the network in a master  
7 queue at said master node.

1 2. The method of claim 1 wherein said designating steps are performed by  
2 comparing numerical values of node IP addresses.

1 3. The method of claim 1 wherein the node having the highest IP address is  
2 designated said master node.

1 4. The method of claim 1 wherein the node having the lowest IP address is  
2 designated said master node.

1 5. The method of claim 1 wherein each node of the network is capable of  
2 functioning as either said master node or one of said slave nodes.

1 6. The method of claim 1 further comprising the step of maintaining a copy of  
2 said master queue at one or more of said slave nodes.

1 7. The method of claim 6 wherein said step of maintaining a copy of said master  
2 queue is performed at each of said slave nodes.

1 8. The method of claim 1 further comprising the step of each slave node  
2 requesting a queue position from said master node for access to shared network  
3 resources.

1 9. The method of claim 1 further comprising the step of detecting the connection  
2 of one or more additional nodes to the network and thereupon reiterating said  
3 steps (a) through (c).

1 10. The method of claim 1 further comprising the step of detecting the  
2 disconnection of one or more nodes from the network and thereupon reiterating  
3 said steps (a) through (c).

1 11. The method of claim 10 further comprising the step of deleting from said  
2 master queue all queue positions corresponding to said disconnected nodes.

1 12. In an Internet Protocol (IP) network having a plurality of nodes, a method of  
2 designating a queue-responsible node comprising the steps of:

3 (a) utilizing the IP addresses of said plurality of nodes to designate a  
4 master node;

5 (b) designating all other nodes as slave nodes;

6 (c) maintaining the queue positions of all nodes in the network in a master  
7 queue at said master node;

8 (d) detecting changes in the number and identity of nodes connected to the  
9 network and thereupon reiterating steps (a) through (c).

1 13. The method of claim 12 wherein step (d) comprises detecting the  
2 disconnection of the master node from the network.

1 14. The method of claim 12 wherein step (d) comprises detecting the connection  
2 of one or more additional nodes to the network.

1 15. The method of claim 12 wherein step (d) comprises detecting the  
2 disconnection of one or more slave nodes from the network, further comprising  
3 the step of deleting from the master queue all queue positions corresponding to  
4 said one or more disconnected slave nodes.

1 16. A system for queue-handling in an Internet Protocol (IP) network having a  
2 plurality of nodes, comprising:  
3 a master node;  
4 a master queue at said master node for maintaining queue positions of all  
5 nodes in the network;  
6 one or more slave nodes;  
7 software for designating said master node and said one or more slave  
8 nodes according to the IP addresses of the nodes connected to the network at  
9 any given time; and  
10 software for detecting changes in the number and identity of nodes  
11 connected to the network.

1 17. The system of claim 16 further comprising software associated with one or  
2 more of said slave nodes for maintaining a copy of said master queue at said one  
3 or more slave nodes.

1 18. The system of claim 16 further comprising software associated with each of  
2 said nodes for maintaining a copy of said master queue at each of said slave  
3 nodes.

1 19. The system of claim 16 wherein the network comprises a Local Area Network  
2 (LAN).

1 20. The system of claim 16 wherein the network comprises a Virtual Local Area  
2 Network (VLAN).

1 21. The system of claim 16 wherein the network comprises a Wide Area Network  
2 (WAN).

1 22. The system of claim 16 wherein the network comprises a cluster within an  
2 area network.

1 23. A system for queue-handling in an Internet Protocol (IP) network comprising  
2 at least a first cluster and a second cluster, each cluster further comprising:

3 a plurality of nodes with at least one of said nodes being a master node  
4 and the remaining nodes being slave nodes;

5 a master queue at said master node for maintaining queue positions of all  
6 nodes in the cluster;

7 software means for dynamically designating said master node and said  
8 slave nodes according to the IP addresses of the nodes connected to the cluster  
9 at any given time; and

10 software for detecting changes in the number and identity of nodes  
11 connected to the cluster.

1 24. The system of claim 23 further comprising software associated with one or  
2 more of said slave nodes in each cluster for maintaining a copy of said master  
3 queue at said one or more slave nodes in each cluster.

1 25. The system of claim 23 further comprising software associated with each of  
2 said slave nodes for maintaining a copy of said master queue at each of said  
3 slave nodes.

1 26. The system of claim 23 wherein the network comprises a Local Area Network  
2 (LAN).

1 27. The system of claim 23 wherein the network comprises a Virtual Local Area  
2 Network (VLAN).

1 28. The system of claim 23 wherein the network comprises a Wide Area Network  
2 (WAN).